



# UNITED STATES MARINE CORPS

COMMANDER, MARINE FORCES RESERVE  
4400 DAUPHINE STREET  
NEW ORLEANS, LOUISIANA 70146-5400

## ORIGINAL

ForO 11000.5 Ch 2  
G-1P  
23 Dec 99

### FORCE ORDER 11000.5 Ch 2

From: Commander  
To: Distribution List

Subj: DEFENSE UTILITY ENERGY REPORTING SYSTEM (DUERS)

1. Purpose. To direct pen changes to the basic Order.

2. Action

a. Page 1, change the office code from "BOS" to "FAC". Page 2, paragraphs 4a, 4b, 5, and 6; Enclosure (2) paragraph 1; Enclosure (3) paragraph 1b; Appendix A to Enclosure (3) page A-6 paragraph 1 and page A-15 change to read "FAC" vice "BOS".

b. Page 1, change paragraph 3a to read "The DUERS report reflects utility fuel and energy consumption. Selected units will be directed by MARFORRES Facilities to submit the DUERS report. Those units not directed shall monitor fuel consumption of energy and the cost paid to the supplier by the host."

c. Remove Enclosure (1) from the basic Order. Strike out Enclosure (1) from Enclosure block. Renumber Enclosure (2) as Enclosure (1) throughout. Renumber Enclosure (3) as Enclosure (2) throughout.

3. Filing Instructions. File this Change transmittal immediately behind the signature page of the basic Order.

  
P. J. DULIN  
Chief of Staff

Distribution: A/B



UNITED STATES MARINE CORPS

COMMANDER, MARINE FORCES RESERVE  
4400 DAUPHINE STREET  
NEW ORLEANS, LOUISIANA 70146-5400

ForO 11000.5 Ch 1  
BOS

101 APR 1996

FORCE ORDER 11000.5 Ch 1

From: Commander  
To: Distribution List

Subj: DEFENSE UTILITY ENERGY REPORTING SYSTEM (DUERS)

1. Purpose. To direct a pen change to the basic Order.
2. Action. On enclosure (1), paragraph 1, add the following unit:  
"Pasadena, CA - 4th LAADBn, MACG-48, 4th MAW".
3. Filing Instructions. File this change transmittal immediately behind the signature page of the basic Order.

  
J. R. COHN  
Chief of Staff

DISTRIBUTION: D



# UNITED STATES MARINE CORPS

COMMANDER, MARINE FORCES RESERVE  
4400 DAUPHINE STREET  
NEW ORLEANS, LOUISIANA 70146-5400

ForO 11000.5

BOS

21 MAR 1995

OFF

COPY

## FORCE ORDER 11000.5

From: Commander  
To: Distribution List

Subj: DEFENSE UTILITY ENERGY REPORTING SYSTEM (DUERS)

Ref: (a) MCO 4100.9C  
(b) NAVFAC Instruction 11300.37

Encl: (1) DUERS Reporting Units List  
(2) DUERS Reporting Instructions  
(3) Energy Conservation Survey Guide Instructions

1. Purpose. To provide information and instructions concerning Defense Utility Energy Reporting System (DUERS). To assist in reducing energy loss or waste through a guide for energy conservation.

2. Cancellation. ForO 11000.2.

3. Background. DUERS provides information on fuel and energy consumption to the Department of Defense. Reference (a) tasks Marine Forces Reserve (MARFORRES) with the responsibility of submitting DUERS. Reference (b) provides data on energy consumption by shore facilities and is used to formulate energy policy, correct energy related problems and measure energy conservation achievement.

a. The DUERS report reflects utility fuel and energy consumption. Units required to submit this report are listed on enclosure (1) of this Order. Those units not listed on enclosure (1) shall monitor fuel consumption and submit the fuel consumption data to the host command.

b. Those units which are tenants, but operate additional facilities paying a supplier directly for energy consumed, report the consumption of energy and the cost paid the supplier to the host command.

c. Units occupying facilities as a tenant reimbursing a hosting unit for all utilities do not submit this report.

d. Reporting instructions are contained in enclosure (2) of this Order.

ENERGY CONSERVATION SURVEY GUIDE INSTRUCTIONS

1. The Energy Conservation Survey provided as Appendix A to this enclosure is used to provide background information on energy usage in addition to providing a guide to identify corrective action. It is mandatory that the Unit Commander, or the designated representative, annotate each item in the space provided with a yes or no answer.

a. A yes answer shall mean that a satisfactory condition exists, the item is not applicable, or alternatives are not viable or cost effective.

b. A no answer shall indicate required action. Required action may be performing an on the spot correction, identifying a future project, changing or instituting policy, identifying the problem to the host commander, requesting additional advice or assistance from MARFORRES (BOS) or deferring action pending further evaluation of alternatives.

2. This energy conservation survey is promulgated as a vehicle to assist the Unit Commander.

ENCLOSURE (3)

ForO 11000:5  
21 MAR 1995

DUERS REPORTING UNITS LIST

1. Inspector-Instructors/Commanding Officers/Site Commanders of the following units shall submit DUERS:

Unit

Baltimore, MD	-	4th Combat Engr Bn
Brookpark, OH	-	3d Bn, 25th Marines
Chicago, IL	-	2d Bn, 24th Marines
Eastover, SC	-	Co D, 8th Tank Bn (Columbia)
Galveston, TX	-	Co B, 4th Aslt Amph Bn
Huntsville, AL	-	Btry K, 4th Bn, 14th Marines
Johnson City, TN	-	Co L, 3d Bn, 24th Marines
Lynchburg, VA	-	Co C, 4th Combat Engr Bn
Memphis, TN	-	Co K, 3d Bn, 23d Marines
Mongtomery, AL	-	Co L, 3d Bn, 23d Marines
Newport News, VA	-	HQ Co (-), 4th Supply Bn
Pico Rivera, CA	-	Btry K, 1st Bn, 14th Marines
Rome, GA	-	4th Supply Bn, 4th FSSG
San Rafael, CA	-	23d Marines
Syracuse, NY	-	Co B, 8th Tank Bn
Tampa, FL	-	4th Aslt Amph Bn
Terre Haute, IN	-	Co K, 3d Bn, 24th Marines
Texarkana, TX	-	Blk Fuel Trans Plt
West Trenton, NJ	-	Btry G, 3d Bn, 14th Marines
Wilmington, NC	-	4th & 5th Longshoreman Plt, 4th Landing Support Bn
Wyoming, PA	-	MWSS-473, Det B, MWSG-47, 4th MAW
Yakima, WA	-	Co B (-) (Rein), 4th Tank Bn

ENCLOSURE (1)

ENCLOSURE (2)

21 Mar 95

DUERS REPORTING INSTRUCTIONS

1. Reporting Period. The reporting period will be each month. Reports are due to the Commander, MARFORRES (BOS) no later than the 20th of each month by facsimile with a hard copy to be received no later than the 30th of the month.

2. The following units of fuel and energy will be standard:

Electricity - Kilowatt hours

Natural Gas - Hundreds of cubic feet or therms

NOTE: In cases where suppliers sell energy in units of measure other than specified above, those units will be converted for reporting purposes. Local suppliers should be able to assist in converting units.

3. Paragraphs pertaining to utilities not purchased by reporting units will be omitted from the report.

4. Format

- a. From: Unit Heading
- b. To: Commander, MARFORRES (BOS)
- c. Subj: Defense Utility Energy Reporting System
- d. Ref: (a) ForO 11000.5
- e. Rpt: DUERS
- f. Rpt Unit Location: (City and State)
- g. Rpt Prd: (Month)
- h. Electricity: KWH MWH COST \$
- i. Natural Gas: CCF's MBTU COST \$
- j. POC for Cmd, Telephone Number, Fax Number

5. The following examples are given to assist unit with energy conversion:

a. Conversion Factor for Electricity: Take the number of KWH and divide by 1,000 = This will convert KWH to MWH.

Example: 21,169 KWH / by 1,000 = 21.17 MWH

b. Conversion Factor for Natural Gas: CCF's multiplied (x) by 1,031 BTU/Ft cubed multiplied (x) by 100 = BTU, then take the BTU's and divide (/) by 1,000,000 = MBTU.

Example: 60,763 CCF's x 1,031 = 62,646,653 x 100 =  
6,264,665,300 BTU's / 1,000,000 = 6,264.67

ForO 11000.5  
21 Mar 95

ENERGY CONSERVATION SURVEY GUIDE INSTRUCTIONS

1. The Energy Conservation Survey provided as Appendix A to this enclosure is used to provide background information on energy usage in addition to providing a guide to identify corrective action. It is mandatory that the Unit Commander, or the designated representative, annotate each item in the space provided with a yes or no answer.

a. A yes answer shall mean that a satisfactory condition exists, the item is not applicable, or alternatives are not viable or cost effective.

b. A no answer shall indicate required action. Required action may be performing an on-the-spot correction, identifying a future project, changing or instituting policy, identifying the problem to the host commander, requesting additional advice or assistance from MARFORRES (BOS) or deferring action pending further evaluation of alternatives.

2. This energy conservation survey is promulgated as a vehicle to assist the Unit Commander.

21 MAR 1995

APPLIANCES

1. Are coffee messes consolidated where practical?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

2. Are refrigerators set at an appropriate temperature and opened as infrequently as possible?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

3. Copiers requiring a lengthy warm-up time can be turned on later in the morning. Those copiers with instantaneous or quick warm-up time can be turned off when not used. Is an appropriate policy established?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

4. Electricity chilled water fountains can waste energy. At most Reserve centers, the ground water temperature is perfectly acceptable. Unplug it for two weeks and put a sign on it explaining that it was intentionally unplugged as an energy conservation measure. After two weeks, personnel can be expected to get over the sense of loss and find the unchilled water just as acceptable. (How often is electrically chilled water used to fill coffee pots?)

Results: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Certain vending machines operate mechanically utilizing electricity only to illuminate the gedunk. Is there any at your installation which can be unplugged?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. Are appliances turned off when not in use? During hot weather this is particularly important so the power system is not overtaxed and the heat load of these appliances do not add unnecessarily to the A/C load.

Yes: \_\_\_\_\_ No: \_\_\_\_\_

7. Are appliances kept in good working order?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

INDOOR LIGHTING

1. Indoor lighting is costly. In many training centers, it accounts for from one to two-thirds of the monthly electric bill. Exercising indoor light discipline, therefore, can save considerably on electric bills.

2. A walk through the training center will identify those areas requiring continuous light, intermittent light, or no light at all. Are any spaces being lighted which do not require illumination?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

3. Signs in storage spaces which state "This bulb intentionally removed to conserve energy" save money, promote energy awareness, and prevent people from removing the bulbs. How many places can this technique be used?

How many: \_\_\_\_\_

4. Borrow a light meter from a photographer. Does your activity exceed the following standards? 50 foot-candles at work stations, 30 foot-candles in work areas, and 10 foot-candles in non-working areas (when occupied).

Yes: \_\_\_\_\_ No: \_\_\_\_\_

5. During the survey, identify where existing features can be lowered so that smaller wattage bulbs or fewer fixtures can be used to provide required light.

6. Fluorescent lighting is cheaper than incandescent lighting. Where can existing incandescent fixtures be replaced by ballast type fluorescent fixtures?

Comment: \_\_\_\_\_

7. Identify those circuits in which one switch turns on lights in both working and non-working spaces. Is rewiring indicated?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

8. Are background colors and textures (overhead, bulkheads, deck, curtains) those which enhance the overall lighting level?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

21 MAR 1995

SOLAR ENERGY

1. Solar energy in the form of heat and light may not always be available or wanted, but it's cheap. It should be used and regulated where possible in concert with other systems. In each of the following measures there is a trade-off between light and unwanted heat. Each should be evaluated or even experimented with to obtain the cheapest solution.

2. Is sunlight used wherever possible instead of electrically generated light in office spaces?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

3. Are venetian blinds and curtains used to allow solar radiation to enhance the heating system or to preclude competition with the air conditioner?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

4. Prior to repainting or reshingling the exterior and roof of the building, is a color chosen which will reflect or absorb solar heat as appropriate to the climate?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

5. Deciduous trees planted on the south side of a building provide shade during the summer and allow the sun's radiation to strike the building in the winter. Is this a feasible and cost effective idea at your center?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. Storm windows and double plated glass not only provide insulation but create a greenhouse effect. Both can reduce heating bills. Storm windows can be removed in summer. Double plated windows are more efficient. The greenhouse effect will increase cooling bills. Is one of the alternative feasible at your facility?

Yes: \_\_\_\_\_ No: \_\_\_\_\_ Comment: \_\_\_\_\_

7. Can normal duty hours be scheduled around the sun, i.e. to reduce afternoon air conditioning in summer or morning heating in winter?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

ForO 11000.5  
21 MAR 1995

#### DEVICES AND GADGETRY

1. Recent energy shortages have prompted the manufacture of many energy saving devices. Some are very effective, some are not. The below devices are listed for the Commanding Officer's information. Addresses with experience with these or other devices are requested to forward information to the Commander, MARFORRES (BOS).
2. Phantom Tubes. Removing a fluorescent tube from a four tube ballast fixture causes an imbalance in the circuit. Phantom tubes complete the circuit. The substitution of fluorescent tubes with phantom tubes has proven to be an extremely cost effective technique at various installations.
3. Poplarized screens for lighting fixtures. Experience in other units has proven these devices neither save energy nor increase the quality of indoor illuminations.
4. Adhesive backed shading applied to windows for the purpose of reducing glare and radiant solar heat have not proven to be cost effective.
5. Except in selected cases, solar energy cells mounted on or near buildings for the purpose of providing various types of energy are not yet cost effective for retrofit projects.
6. Certain devices are marketed under various names which are installed in circuits servicing appliances. They supposedly in some way increase the efficiency of the appliance. Department of the Navy tests on these devices reveal that the energy saved through the installation of these devices is attributed only to the increased energy awareness of the purchaser.
7. Time clocks are good devices for automatic shutoff of security lighting, thermostatic temperature cut backs, and circulating pump shut-offs. They are subject to tampering and power outages which can throw them out of phase. For maximum efficiency, they must be adjusted with seasonal changes and daylight saving time changes.
8. Facilities with thermostatically controlled central heat and air can procure and install thermostats capable of a "dead band" setting. When the dead band is set at 65-80 degrees Fahrenheit, during the daytime neither system cuts in when the room temperature is between the two settings.

Appendix A to  
ENCLOSURE (3)

VEHICLES

1. Are trips pooled?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

2. Are engines tuned for maximum efficiency?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

3. Is tire pressure maintained at the maximum allowable pressure?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

4. Do drivers use energy saving driving techniques?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

5. Is idling time kept to a minimum?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. Oil must be changed in accordance with manufacturer's instructions to maintain coverage under the warranty for commercial vehicles. Thereafter oil should be changed only as necessary or as required by current directives.

7. Are trips avoided during rush hour whenever possible?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

8. Is the 55 MPH speed limit enforced? Most automobiles get about 20% more miles per gallon on the highway at 55 MPH than at 70 MPH.

Yes: \_\_\_\_\_ No: \_\_\_\_\_

9. Are vehicle checks made to see what fuel economy it is getting? Make a note of your mileage when the tank is full. Then note the mileage again when you fill it up again. Divide the numbers of miles traveled by the number of gallons bought, and you have the miles per gallon your car delivers.

Yes: \_\_\_\_\_ No: \_\_\_\_\_

ForO 11000.5  
21 MAR 1995

### DOMESTIC HOT WATER

1. Check the temperature of your domestic hot water. Does it exceed 100 degrees Fahrenheit?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

2. Inspect the entire system for leaks.

Are there any? \_\_\_\_\_

3. Is hot water piped to areas of the training center where it is not really needed?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

4. Do any dead lines exist where hot water was previously supplied and later cut off? These dead lines conduct heat away from the system.

Yes: \_\_\_\_\_ No: \_\_\_\_\_

5. Is hot water used when cold water could suffice? How many Marines, after making a head call, habitually turn on the hot water faucet, finish washing their hands before the water gets hot, and never visualize the purchased heat being conducted from the water, through the pipe, and into the air?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. Inspect shower heads. A deluge of hot water wastes energy. The flow of water can be restricted by replacing the shower heads with a different style or installing devices which restrict water flow. Are Navy showers encouraged?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

7. Shower body mixing valves and washing machines are possible areas for hot water to be introduced to the cold water system. Are valves shut off tightly after use?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

Appendix A to  
ENCLOSURE (3)

WINDOW AIR CONDITIONING UNITS

1. Window air conditioners are significant energy consumers.

2. Are window units used to cool working spaces below 80 degrees Fahrenheit?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

3. Are window units used to augment central air in lieu of correcting deficiencies in the central air unit?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

4. Are window units used to cool excess office space which could be partitioned off?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

5. Are these units run in the "automatic" mode so that they shut off at a pre-set temperature?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

6. Are doors left open to passageways in air conditioned offices?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

7. Are window units run in lieu of opening windows for ventilation? Window units use a tremendous amount of energy and should be avoided during summer months.

Yes: \_\_\_\_\_ No: \_\_\_\_\_

8. Has a member of the staff been designated to shut them off for the night?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

9. Are window units ever run to counteract the effects of a maladjusted central heating system?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

10. Are filters cleaned or replaced when necessary or cleaned at least monthly?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

## HEATING SYSTEMS

1. An inefficient heating system can be a tremendous energy and money waster.
2. Are working spaces heated above 68 degrees Fahrenheit?  
Yes: \_\_\_\_\_ No: \_\_\_\_\_
3. Is the system cut back during non-duty hours?  
Yes: \_\_\_\_\_ No: \_\_\_\_\_
4. Inspect hot water and steam pipes for proper insulation. Generally speaking, if the pipe is or becomes very hot to the touch but does not itself provide usable heat to a working space, it should be insulated. In older facilities built when energy was cheap, it was not cost effective to insulate valve bodies and flanges. It is now.
5. Similarly, inspect outside exposed hot air ducts.
6. Has the boiler been recently inspected for safety and efficiency? Excess soot and scale insulate heat transfer surfaces. A poorly adjusted flame wastes fuel.  
Yes: \_\_\_\_\_ No: \_\_\_\_\_
7. If you occupy an older training center, have you checked into the feasibility of an energy re-utilization system? These systems, too numerous and technical to describe in the checklist, convert wasted energy to useful energy, e.g., preheating outside air, fuel, domestic hot water or hot water heating system with exhaust gases or for motor heat.
8. Are windows ever opened to counteract the heating system?  
Yes: \_\_\_\_\_ No: \_\_\_\_\_
9. In training centers with steam heated radiators, steam valves should be turned on or off, not left in between. A partially closed valve will not decrease heat. It will, however, cause increased erosion if the valve cannot be shut off.
10. Check storage areas and other non-working spaces. Are they being unintentionally heated?  
Yes: \_\_\_\_\_ No: \_\_\_\_\_

ForO 11000.5  
21 MAR 1995

21. Are exterior walls checked for cracks that penetrate into the interior walls?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

22. Is the duct work carrying conditioned air through unconditioned spaces insulated?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

23. Would adding an additional thermostat provide better heating control?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

SAMPLE

ForO 11000.5  
21 MAR 1995

9. Is ventilation shut down during unoccupied periods in noncritical areas?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

10. Are broken windows repaired?

Yes: \_\_\_\_\_ No: \_\_\_\_\_ If not, why? \_\_\_\_\_

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11. Are misaligned doors rehung?

Yes: \_\_\_\_\_ No: \_\_\_\_\_ If not, why? \_\_\_\_\_

12. Are the ventilation fan and lights on the same circuit in heads and locker rooms?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

Appendix A to  
ENCLOSURE (3)